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The Dyer's Hand

By Ruth Gaines

It is with diffidence that I approach a subject so technical and by now so standardized as that of dyeing. I can only discuss my own experiments and findings, and these in a special field—the hand dyeing of angora wool. I am led to believe that this textile fibre presents especial difficulties, being impervious to many ordinary dyes. Besides, it is delicate, destructible by strong mordants and injured by long boiling.

However, I am also sure that results obtained in this material will be obtainable at less effort in the more usual fibres of wool and cotton, so that the general discussion may be of help to other dyers who, like myself, have been fascinated with the rich reds obtained by our Eastern Indians in deer-hair embroideries, with those that still glow in the vermilions of Inca fabrics; with the sea-blues of Chilcat blankets and the gamut, from sky to royal purple, that our grandmothers preserved for us in the rugs, blankets and coverlets of Colonial days.

A dyer should by rights be chemist, botanist, and physicist. But I, who am none of these, take comfort in the knowledge that the Indians and our own ancestors in the art were also empiricists. As the anonymous author of that delightful *Journal of a Naturalist*, which depicts English country life of a hundred years ago along the Severn estuary, says: "Perhaps we have no art or trade less confined within the trammels of formulae than that of the dyer; every professor appearing to have his own methods of acquiring particular tints and shades, guided often in his proportions by that mutable sense, the taste, and regulating the temperature of his compositions, not by the thermometer, but by the feeling of the hand; and so capricious are these tests, so different the sensations of the operator, or the variable influences of solar light, that success on one day does not insure a similar success on another." Thus was the dyeing done in Shakepeare's day, two hundred years earlier, who, charging his misdeeds to his poverty, concludes Sonnet CXI with the familiar lines:

"Thence comes it that my name receives a brand,

Ritual of the Kettles
Brass, copper and iron

And almost thence my nature is subdued
To what it works in, like the dyer's hand."

William Tucker in *The Family Dyer and Scourer* preserves this tradition of the craft forcefully in the opening paragraph of his instructions, directing the novice that "instead of a copper boiler, any tin or brass boiler will do, so that there is room to stir and handle over the goods," explaining in a footnote: "By *handling over* is meant passing the goods through the hand from end to end, to make the colour communicate equally through the piece." On a later page he meticulously inserts two recipes — which Shakespeare would have found ineffectual—"*How to take the Stain of the dye from the Hands.*"

Thus, with the hand, is the blue pot of indigo tested to this day in our Southern mountains. Thus, as our

(*Continued on page* 158, *column* 3)

New Englanders Always Liked Stoves

By Josephine H. Peirce

Historians and other writers have occasionally expressed surprise that so little has been incorporated in records and histories on the subject of heating used by the New England colonists. They have rather casually mentioned that huge fire-places furnished the only heat prior to 1800, and that stoves were unheard of.

After delving into early records of all kinds, I am firmly convinced that the contrary is true; that stoves were commonly used in the houses built after the first crude shelters, and for that reason only mentioned casually. In the Plymouth Colony, evidence of a built-in stove of Dutch design was found in 1937, when an excavation was made at the site of the house of the Pilgrim John Howland. The house was built in 1638 and was burned down probably between 1676 and 1690. The site was undisturbed until the family excavated it in 1937. This seems very logical when it is remembered that the Pilgrims lived for twelve years in Holland before coming to New England, and must have become quite accustomed to stoves, for the Dutch people had been using them for at least a century.

Undoubtedly the first stoves in the colonies were made of wood daubed with mud or clay, as were the chimneys, but in 1629 came the first importation of bricks, ten thousand of them. So it seems safe to assume that some of the bricks were used to line a few of the stoves to make them fire-proof; others were used for chimneys and fire-places, and more of the bricks followed on every ship. John Malbon may have come on the same ship with the first lot, for he "havinge skyll in iron works & willing to put in 25 pounds in stocks" was sent to New England (with all expenses paid) to find out and report what could be done

about iron works in the Massachusetts Colony. His report apparently was favorable, for the next thing that happened, John Winthrop, Jr., got together "undertakers" for the project headed by a man named Beex, with his father-in-law, Hugh Peter, and his uncle, Emanuel Downing. With a company of skilled ironworkers and about £1,000, young Winthrop embarked on the *Ann Cleve* at Gravesend in May, 1643, and, while various things hampered them and prolonged the voyage, the group arrived at the Massachusetts Colony and established a furnace at Saugus (called Hammersmith by the workers) so that it was operating in 1645. Richard Leader was sent to take charge of the work at a salary of £100 a year. He had some experience with ironworks in Ireland, and as a cultivated Puritan gentleman, became a close friend of Winthrop.

Another plant was opened in Braintree in 1646 under the direction of Dr. Robert Child. The forge and furnace had a capacity of eight to ten tons a week and enough iron was produced during the few years they were in operation for all the Colony's needs, with a surplus for export. A letter to John Winthrop, Jr., who happened to be at Pequot River, which Dr. Child wrote on March 15th, 1647, mentioned the Saugus and Braintree enterprises where: "We have cast this winter some tuns of pots, likewise mortars, stoves and skillets." But trouble soon started. The "undertakers" in England did not understand local conditions, and the story was one of long-drawn-out lawsuits.

The Leonard Brothers, who had been working in Saugus, set up a bloomery and forge at Taunton and Raynham in 1653, and others followed. Despard's Furnace was operating in Pembroke in 1702; King's Furnace was listed in Taunton in 1724; there was one at Plimpton in 1730; and at Pope's Point in South Carver in 1733.

One of the most interesting items in this early history of New England stoves is the fact that a patent was issued by the General Court of the Massachusetts Bay Colony in 1652 to one John Clarke for his real Yankee invention: "For saueing of firewood & warming of rooms with little costs & charges." The Court stated that it would be of great benefit and ordered that anyone using the "experiment" should pay Mr. Clarke ten shillings for the privilege. A time limit of three years was put on it in accordance with the Old Colony Laws passed in 1641, which ordered that "No Monopolies shall be granted but of inventions that are profitable to the country and that for but a short time." Apparently the device became not only popular but important, for at the expiration of the three years, the Court confirmed the order "for the terme of his life," something almost unheard of at the time. John Clarke, records state, was a "chirurgeon" who had practiced in London before coming to Newbury in Massachusetts. Later he moved to Boston, possibly at the time of his patent, for that was where he died in 1664. His wife, Martha, sister of Sir Richard Saltonstall, survived him for sixteen years, and lived comfortably on the proceeds of his stoves. While the patent expired at her husband's death, there were many stoves left which came to her by his will.

Judge Samuel Sewell of Boston liked the comfort afforded by a stove, and mentioned the fact frequently in his diary. On Friday, January 16th, 1701/2, he wrote: "Comfortable moderat wether; and a good fire in the stove warm'd the room."

In December, 1702/3, he dined with his daughter and her family "in their Chamber where their stove is." He wrote in February, 1705/6, of "passing out of the stove-room into the kitchen". And again, in January, 1706/7, the Judge found his son David sick, and noted: "We have the stove-room Chamber fitted for him and place him there." The Judge's stoves must have been of local manufacture, for nowhere in his papers is there an order for a stove, and he certainly imported a great many clothes and furniture, as well as other items for family use. The stove-room Chamber was the room above the stove-room, and a trap-door in the ceiling above the stove allowed the surplus heat to warm the upstairs room. Later iron registers were used, and are still found in country houses where stoves furnish at least part of the heat.

Unfortunately the early castings cannot be found today, and few examples remain, with the exception of fire-backs and pots. Deacon Spofford of Jaffrey, New Hampshire, writing to *The Salem Gazette* in 1796, gave one of the reasons: "Many of the iron stoves cracked and broke by the heat of the fire." And, too, many of the best examples of the early cast plates were remelted when more efficient stoves were introduced.

The Dyer's Hand

(*Continued from page* 157, *column* 2)

Naturalist notes, varies every recipe I have examined. And thus, without rubber gloves, glass crucibles, glass rods, exact dependence on scales, measures or thermometers, have I rejoiced in my adventures.

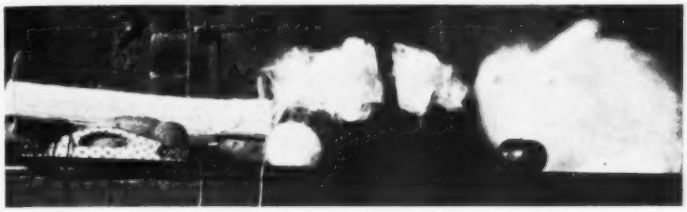
It was my ambition at first to antedate the indigos and cultivated madders of later colonial days (we are told that indigo came into general use

Dyes, Indian and Colonial

in the colonies not earlier than seventeen hundred) with the native dyes of our New England fields and woods. Here indeed was scope for research. I knew that lichens and sub-arctic fungi formed the basis for the fast blues and reds of the Indians of Alaska and Canada. But those that I experimented with on our farm, from the gray lichens of the stone walls to the gorgeous umber and orange growths on the birch stump, gave only variations of yellow. And, since yellow is a color obtainable in a hundred ways—from poplar tips, coreopsis, sunflower, black-eyed Susan, birch leaves, golden-rod, gold-thread, and various roots and barks, I chose an easy course among them. The lichens and fungi still wait on the Indian summer days when Autumn will have redipped her foliage in brown and crimson and gold.

Our native butternut is a fruitful and very satisfactory source of color, from yellow through many shades of

brown to mauve. It varies as the nut-rind is used green, ripe, or dried, and as the pinkish shuck is introduced into the decoction. Best of all, it needs no mordant to prepare the fibre or to set the dye, its tannic acid being an absolute guarantee. At the same time, it may be altered or rendered more lustrous by the addition of a pinch or two of some simple chemical from the kitchen shelf.



YARNS, LINEN AND ANGORA
Also certain raw materials, including Wendy Russet

Green is usually a compound color, derived from blue and yellow; for example, indigo and golden-rod. But there are nature's sources of this color also, such as that to be found in the root of the yellow dock, and in the hickory bark; and there were known to our grandmothers also manipulations of the indigo pot which resulted in the soft blue-greens that have never yet been captured by modern substitutes.

Grays have many sources, chiefly in barks and tree roots; alder, sumac, maple, hemlock and many others. These too are comparatively simple to extract and are fast in color. Nor do the raw materials deteriorate much in storage.

Violets and garnets are locked in the bark of the birch and the roots of the pine; the blackberry, on my angora wool, yields an ethereal amethyst. But nowhere have I yet found in pasture or woods a native source of blue or red. This is not true, of course, of ordinary wool; the poke-berry, the sumac berry, the bloodroot, the blackberry itself are often mentioned—and they well supplied our Indians. I am not done with them yet for the pinks and reds which have so far eluded me. Equally ready sources of blue are the blueberry, the wild grape skin, the sunflower seed. But not yet has the angora fibre yielded for me to the usual rules for these dyes.

This being so, I turned from the out-of-doors and the hearsay of our neighbors—some of them of half Indian stock, with memories of woodland craft—to books. There are several handy manuals issued by government agencies, state and national, with exact directions and formulae. The state publications are the most interesting for anyone dabbling in primitive dyes, since they feature the flora of the region. One should not forget in this connection the researches published by the Bureau of American Ethnology and by the Canadian government, giving the secrets of Indian dyeing. But, so far as I know, there is none as yet dealing specifically with the New England sector.

For pure enjoyment, as well as information, one should go back to the seventeenth century accounts of our region contained in Wood's *New England's Prospect* and Josselyn's *New England's Rarities Discovered*, and to eighteenth century Jeremy Belknap's *History of New Hampshire*. For the nineteenth century there is that charming reprint, *The Pocuntuc Housewife*, first published in Deerfield, Massachusetts, in 1806. Being ignorant, as were these early explorers and settlers of the riches of our primeval forests, I have shared in their artless discoveries.

"Within this *Indian* Orchard fruites be some,
The ruddie Cherrie, and the jettie Plumbe,
.....
The Diars Shumack, with more trees there be,
That are both good to use, and rare to see,"

rhapsodizes William Wood.

John Josselyn's rambles were chiefly in New Hampshire. He notes: "Hemlock-tree, a kind of spruce. The bark of this tree serves to dye tawny. The fishers tan their sails and nets with it." Warden, writing of the dye-trees about Washington, D. C., as late as 1816, says: "The bark of the crab-tree is employed to dye wool of a black colour; a mixture of the bark of maple and chestnut, for purple; that of the dog-wood, for a pink colour, and that of the root of the sassafras gives a fine yellow."

No doubt a great many of our native dyes were a gift from the Indians. They too were adepts with that first implement, the human hand, observing in addition ceremonial precautions to insure success; offering to the Four Winds a sacrifice of tobacco; fasting a day for each color, "else want of uniformity will result." The mordants of the Indians were, in general, the same as those of the colonists. Urine, an agent as old as the hand, acted to produce, with copper, the velvet blacks and the green-blues of the incomparable Chilcat robes. An iron decoction, with ashes and silt, set the red of one Chippewa dye. Variations of these methods constitute the recipes of our own grandmothers, copied, some of them, in butternut ink with a quill pen on scraps of paper or in brown leather pocket note books. Here is one coming down from the settler who cleared our farm, laid up our stone walls and built our house:

"Collor with butternut. Set on back of the stove wher a little warm soak butternut bark or outside sucks 24 hour in a iron kettle take bark and shucks out wet the yarn in cold water put into the butter nut water stand 24 hours ring. out shake up 2 or 3 times

INDIGO DYE POTS AND COPPER MEASURES

in the time to air ring out wash in soap suds to set the collor and dry."

But the Indians had other gifts to offer the colonists in the way of color than herbs, leaves, roots and barks. They made free use of dyes already prepared by nature in minerals; hematite, cinnabar, ochres—green, yellow and brown—and cerulean azurite. I have followed their example. But whereas they obtained their crude ingredients by barter or by actual digging, I was put to it to find these substances which used to be so common that "every house affords the necessary apparatus, and every town the drugs." Time and the War had practically emptied the shelves where used to stand the gilt-banded blue glass bottles of "Chrome," "Indian Red," "Vermilion," in juxtaposition with "Indigo," "Crimson," "Cudbear,"

"Logwood," and "Dragons' Blood." No longer did the housewife buy her ounce of blueing imported from Madras, Honduras or the West Indies. No longer did the painter mix his own colors with these and "Cobalt," "Persian," or "Prussian Blue." But I found them, and they too, with their sounding titles, decorate my improvised cabinet, and dye my wools with the tints that have pleased the Inca, the Aztec and the Indian from time immemorial.

It was not until after the Revolution that we had published guides in this country for our dyers—such arts being held jealously in check by the mother country. In fact, it was only by a sort of smuggling and pirating that we acquired any of this technical knowledge. Such as it was, it consisted of Old-World formulae employing imported or introduced ingredients. Here flourished Spanish float indigo, madder, Scicily shumack, logwood, camwood, brazil-wood, cochineal, fustic, weld, tumeric—queen of them all, indigo. These, with their attendant reagents, infused a strongly alien blend into our simple colonial practices, and one which leads us far astray from the use of our own resources. In some respects, however, as I have confessed, I have yielded to their seductions; I have searched the country over for indigo; I grow my own madder, encouraged thereto by Oregon craftswomen, and I have added the chameleon logwood and the crimson cochineal to my rainbow dyes.

Next to our early naturalists, our most interesting aids to indigenous dyeing are those occasioned by the Civil War. This should have a special appeal to us now, for it was the lack of factories and of imports that set the wives and daughters of the Confederacy to spinning and weaving and to exploring the woods for their native dyes. Just so are we today casting about for substitutes to replace silk and linen. The Governments, both North and South, issued publications to guide producers in their unaccustomed fields; the North concentrating on fibres, the South printing among its series one from the Surgeon-General's Office entitled: *Resources of the Southern Fields and Forests, Medical, Economical, and Agricultural.* This was in 1863.

Quite independently of this official help, apparently, the men and women of the South took upon themselves their share of the common task. "Our soldiers had to be fed and clothed. All clothing and provisions for the slaves had to be produced and manufactured at home. Leather had to be of our own tanning; all munitions of war were to be manufactured inside the blockade . . . Every household now became a miniature factory in itself, with its cotton, cards, spinning-wheels, warping-frames, looms, and so on. Wherever one went, the hum of the spinningwheel and the clang of the batten of the loom was borne on the ear." Thus spirited Parthenia Antoinette Hague describes, in *A Blockaded Family*, how pioneer conditions were reproduced and coped with on a great plantation in Alabama. "Great trouble was experienced," she continues,

COUNTRY STORE
"Every house affords the necessary apparatus and every town the drugs."

"to find dyes with which to color our stuffs; but in the course of time . . . barks, leaves, roots, and berries were found containing coloring properties . . . We used to pull our way through the deep tangled woods, by thickly shaded streams, through broad fields, and return laden with the riches of the Southern forest! Not infrequently clusters of grapes mingled with our freight of dyes. The pine-tree's roots furnished a beautiful dye, approximating very closely to garnet . . . The indigo weed also grew abundantly in the wild state in our vicinage . . . There grew in some spots in the woods, though very sparsely, a weed . . . called 'the queens' delight,' which dyed a jet black on wool . . . the only one of all the weeds, roots, bark, leaves, or berries that would dye jet black. The indigo blue of our make would dye blue of any shade required, and the hulls of walnuts a most beautiful brown; so that we were not lacking for bright and deep colors."

Not only the gathering of the dyes, but the actual making of the mordants and of "indigo mud" were undertaken by these Southern women. Here are two of Miss Parthenia's recipes: "We used to have our regular 'indigo churnings,' as they were called. When the weed had matured sufficiently for making the blue mud, which was about the time the plant began to flower, the plants were cut close to the ground, our steeping vats were closely packed with the weed, and water enough to cover the plant was poured in. The vat was then left eight or nine days undisturbed for fermentation, to extract the dye. Then the plant was rinsed out, so to speak, and the water in the vat was churned up and down with a basket for quite a while; weak lye was added as a precipitate, which caused the indigo particles held in solution to fall to the bottom of the vat; the water was poured off, and the 'mud' was placed in a sack and hung up to drip and dry. It was just as clear and bright a blue as if it had been passed through a more elaborate process." "Copperas of our own production was used as a mordant. A cask or some small vessel was set convenient to the dwelling-house and partly filled with water, in which a small quantity of salt and vinegar had been mingled; then pieces of rusty, useless iron . . . were picked up and cast into the cask. The liquid copperas was always ready, and a very good substance we found it to fix colors in cloth or thread."

In short, for information on colonial household crafts, transposed almost to our own era, let me commend to you the gallant pages of Parthenia Antoinette Hague. I marvel at her, as at the model housewife of Solomon. "I often wonder," she says herself, "how we were able so quickly to adapt ourselves to the great changes rendered necessary in our modes of life by the blockade. But be it remembered that the Southerners who were so reduced and so compelled to rely entirely on their own resources belonged to the Anglo-Saxon race, . . . a race which has civilized America. The reflection to which memory gives rise when I recall war times in the South is this, that 'blood will tell.'

Amen, Parthenia!

Early American Industries Association

Our President's Plan

Our new president, Mr. Alexander J. Wall, who, as almost everyone knows, is Director of the New York Historical Society, has asked us to publish the following letter:

November 15th, 1941

Mr. Charles C. Fischer,
State Supervisor,
Historical Records Survey,
70 Columbus Avenue,
New York City.

Dear Mr. Fischer:

May I present, through you, to the Works Projects Administration for their consideration, a matter of historical research which has long been needed for the fuller development of our historical museums and their greater educational value in making known, through the materials they have gathered, the real story of American democracy.

Recently I returned from a tour of all the principal historical societies in the United States. I found their collecting activities to be much alike from coast to coast, their means meagre, but their collections immense, both in literature and relics, all recording the growth of our country. Yet this material remains on the shelves of the libraries, in storerooms and in haphazardly arranged museums without any interpretation for the visiting public though it has more potential value in teaching the achievements of our great American Democracy than any other medium, as visual impressions are more dramatic and lasting than the printed page. And the story of the progress from early hardships to modern comforts is accepted without examination as to how it all came about while our freedom and our liberty are interpreted as license by many, to the detriment of the fundamental principles of our democracy.

There are in America large numbers of immigrants from all nations who know little or nothing of the heritage of our country and who take its wealth, opportunities, and freedom for granted. The struggles of the past and the accomplishments of our pioneers in all fields of endeavor, which made America the country to which so many people look hopefully, are unknown to them. Agitation that falsely interprets the economic and industrial life of America is everywhere, so we must turn to the records gathered and preserved by the historical societies throughout the land, where the facts are readily available from which to teach the truth about the pioneering hardships, the imagination of those who furthered the great development of America, the courage of men and women who helped carry out adventures into new fields, and the early American industry and its relation to the present, both economic and social.

This teaching story can be put into operation throughout the United States. I have for years sought a medium which would be national in scope, and recently I was chosen President of the Early American Industries Association, a group of people national in membership, interested in collecting objects of all kinds pertaining to industry and the daily life of the people. This organization, still young (organized in 1933), is creating chapters in several states which should be fostered through historical societies everywhere. Such a combined effort would result in a vast accumulation of data on industrial, economic and social America.

Private collectors, dealers and the historical societies must join forces for the advancement of this educational research and teaching project.

My idea, therefore, is that we should begin here in New York City with a small group of say six especially qualified persons to cull from the records all pertinent references to this story of American life in industry, keeping always in mind the relationship of the past to our life of today. This would include wages, working hours, sanitary conditions and the social activities of the past compared to the present. No matter how good or bad these facts may be, it is a foregone conclusion that in America better conditions prevailed than anywhere else in the world. The point is to develop balanced thinking as it is important to know the past in order to understand the present.

As sources of research, I would list the newspapers issued entirely in the interests of workingmen, the following files of which are found in the Library of The New York Historical Society:

Workingman's Advocate, 1830-1833, 1844.
The Man, 1835.
Champion of American Labor, 1847.
New York Mechanic (Robert Stevenson, editor) 1834.
Mechanic (Thomas N. Carr, Publisher), 1835.
New York Mechanic (Rufus Porter, editor), 1841-1842.
Mechanics' Gazette, 1822.
National Trades' Union, 1834.
New York Daily Sentinel, 1830.
Subterranean, 1844-1847.
The Union, 1842, 1843.
Young America, 1851.

Add to these the immense collection of trade cards and advertising material here, the printed broadsides of trade and industry, which tell contemporary history at first hand, and the many volumes of economic history, such as McMasters' *History of the American People*. Sufficient sources are immediately available to begin work.

After a formula has been decided upon and studied at this beginning point, it can be presented and passed on to other points throughout the United States for similar research. Local industries should be especially studied.

In the meantime, the Early American Industries Association would hold exhibitions, bring related material together, record all that is known about each object and make a photograph of it for a huge record file, a sort of Union Catalogue. This idea coincides with the survey now being conducted by Herbert A. Kellar of the Library of Congress Experimental Division of Library Cooperation. These data, with lantern slide illustrations, could be sent out for lectures to schools and associations for the general improvement of knowledge about the growth of America.

The members of the Early American Industries Association have collected and saved these primitive objects in large numbers and it is high time that their real value be used to advance the story of American life. So in the old silver, glass, china, pewter, tools, implements, utensils, furniture and other objects of daily life as well as portraits, lies not only the art of our country, but the record of the development of a great nation of free people.

Better support of the state historical societies may result when the opportunities they have of learning more about the objects they hold and the teaching possibilities are realized. The

story behind each object is what brings its importance to life and justifies the museum's existence.

We have all collected these objects and the accumulation of books and manuscripts is immense, but only a limited few have used the material because it has not been generally interpreted for the layman. It should be a vital part of our educational system.

I trust that the project may receive favorable consideration.

Most earnestly yours,

A. J. WALL, *Director*

[Mr. Wall will welcome any comments from members on the above, addressed to him at 170 Central Park West, New York City. ED.]

John Miles and The Whale Oil Burner

By L. L. THWING

Latin writers complain bitterly of the smoke and smell of Roman lamps, but, so far as we know, our forefathers made no complaints, unless it was about the cost of lamp oil and candles, and their lamps were little if any better than Roman lamps. The early settlers of this country had very few lamps and we do not know what types were used; presumably they had grease lamps, crusies, betty lamps and a few spout lamps. Betty lamps are lighter than Roman bronze lamps, but they give no more light and are better in no other respect. In 1780 lamps were little better than in Roman times, but within the next few years lamp design was revolutionized. First by Ami Argand with his "air burner," and again by John Miles with his "agitible" lamp. Argand's lamps were for the well-to-do and Miles' lamps for the common people.

The distinction between medieval and 19th-century lamps is commonly held to be in the burner, particularly the vertical wick-tube as compared with wick-slots and sloping wick-tubes. A comparative test of whale-oil lamps and betty lamps, however, will demonstrate that for the same number and size of wicks, one will give just as much light as the other. The advantage of whale oil-lamps lies elsewhere. Vertical wick-tubes are probably older than commonly supposed. Technically, Roman lamps had vertical wick-tubes. To be sure, they were only holes in the thickness of the clay, but they were vertical holes. There is no proof and only fragmentary evidence that lamps with vertical wick-tubes were known as early as 1750, but they probably were, although they could not have been very common. There is no reason why a betty lamp could not have a vertical wick-tube, but it would be in no wise improved by this change.

The important advantage of whale-oil lamps over betty lamps lies not in the type of wick-tube, but in the shape and location of the oil font and burner. Prior to 1800 nearly all lamps were low and flat, and stood in their own light. That is, the body of the lamp cast a wide shadow on one side, moreover, the flame was not over two inches above the surface of the table unless the lamp was suspended from the mantle or a beam. Whale-oil lamps are better than betties because the former distribute the light better. We do not really know just when or where the first whale-oil lamp was made, but the best evidence we have points to Birmingham, England, and the year 1787. In that year John Miles, a retired buttonmaker, was granted an English patent for an "agitible lamp." There is nothing in the lengthy detailed specifications in this patent to lead anyone to suspect that it was an invention of any importance. Reading it today, it is hard to see what he had to patent. Whatever he had, he evidently put it on the market at just the right time, because Miles' Patent Lamps were later sold all over England and this country. Ideas and inventions never catch on until the world is ready for them. The world was evidently ready to buy improved lamps, because, out of Miles' patent, whale-oil burners and lamps seem to have developed. There is apparently little in the specifications of this patent, that can be recognized in a whale-oil lamp, but this was not the first time that the features patented by an inventor, proved to be of negligible value, and some other unpatentable feature insured the success of the product. An example of this is the well known Kinnear Patent Lamp, which was widely sold in this country from 1851 to 1865. What Kinnear patented was a device for closing the hole used to fill the lamp, and an auxiliary burner to be used to heat the oil. Neither of these features contributed anything to the success of the lamp, and are seldom, if ever, found on existing specimens. What apparently insured its popularity was the shape of the font, the wide wick, and the small wick which could be used when less light was needed. To these might be added the fact that the Kinnear Patent Lamps were extensively advertised by Ufford, of Boston.

Miles' patent specified an oil-tight tin font, four inches in diameter and an inch high. A vertical wick-tube was soldered into the top near one edge, and around this a circular rim was soldered to catch any over-flow from the wick. A small air-vent was specified and holes for the return of excess oil. A tight tin cap covered these holes and the entire burner, when not in use. These are the essentials of his patent, but the only part of it that appears to have been of any subsequent value, was his claim for a lamp that would not spill the oil if overturned.

Either John Miles, or his son, or some unknown person evidently perceived that in the patent for a non-spillable lamp there was something that could be applied to a different type of lamp than that specified in the details of construction, which called for a low, flat lamp. It is possible that the development of upright lamps had been discouraged by the fact that a tall lamp is more easily overturned than a flat one, but if the oil font is tight, no great harm will be done. Miles may have sold lamps such as those he described in his patent, but the only Miles' lamps so far discovered are whale-oil lamps. Not only do these lamps bear a plate with the words "Miles Patent," but Miles is listed in the Birmingham Directory for 1791 as a lampmaker. Three members of the Rushlight Club each have a Miles' patent lamp. Two of these are peg lamps and the other is a petticoat lamp. Miles' lamps were advertised in Boston in the early 19th century, sometimes as Miles' lamps and other times as patent lamps. They were probably the first lamps to be so designated. Miles' English patent could have had no force in the United States, and without doubt they were made here, as soon as our tinsmiths had a model to work from. Whoever is responsible for the whale-oil lamp conferred a great boon on the people. Argand lamps gave more light, but they were expensive and likely to get out of order. Whale-oil lamps were the poor man's argands.

Ancient Craftsmen

By L. L. Thwing

The oldest pictures of craftsmen are Egyptian wall paintings two to four thousand years old. There are a very few Greek and Roman bas-reliefs, and then for a thousand years there is almost nothing to show us the tools and methods of the Dark Ages. The sketches here reproduced are the oldest known pictures of medieval craftsmen. There are said to be nearly three hundred of them in the original manuscript at Nuremburg, but only a few have been published. This manuscript is the record book of the Mendel Foundation, a home for aged,—but not incapacitated,—craftsmen founded by Conrad Mendel in the above city in 1380. There are sketches of several "brothers" who died in the 14th century, but it is doubtful if the sketches themselves are as old as that. Those which have been published seem to have been drawn by the same hand, and the technique is that of the 15th or 16th century. These sketches are the oldest known "Book of Trades," although they were not intended for publication. They antedate both Jost Amman and Christoff Weigel.

Fig. 1 shows a thimblemaker. He is counter-sinking the little sockets for the needle with a pump drill. Fig. 2 shows a wire drawer. Note that he sits in a swing so that he can pull through a long piece of wire without shifting the grip of the tongs. Fig. 3 also shows a wire drawer, but the wire is stretched and not drawn through a die. Fig. 4 shows a joiner with his tools and specimens of his work. The pictures of the chest with the fleur-de-lis strap hinges and of the livery cupboard are the oldest known to the writer. The men in Figs. 5 and 6 are pewterers. The first shows (or suggests) the casting of a flagon. The square pit is presumably filled with molten pewter. In the other sketch the finishing process is shown. This involved smoothing with a cutting tool and a burnisher. (The man who used these tools is not in the picture.) The lathe is typical of early devices for turning fairly large work. Bells and cannon were finished on similar lathes. One of the brothers who died in 1395 was a turner, but his picture has never been reproduced. Fig. 7 shows a rosary-bead maker. The cutting tool, a combination drill and hollow mill is driven by a bow. The headstock of this drilling lathe is fixed; the footstock is pivoted at the bottom, and, being pressed by the operator's knee, feeds the tool into the work. The workman in Fig. 8 follows the obsolete trade of a hornbreaker.

1

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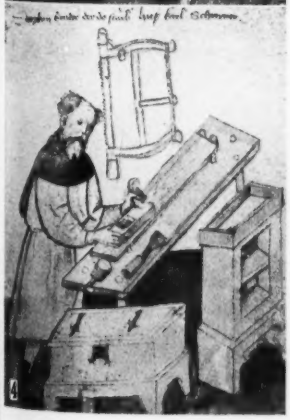
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and is pressing sheets of horn in the wedge-press for horn lanterns. Fig. 9 shows a ropemaker or *seiler* at work. Fig. 10 represents a *schlosser*, in this case a locksmith. The lock is held in a vise tightened by screws. It will be noted that he is holding the file with his thumb uppermost, in the manner now taught in the best trade schools.

These pictures of medieval craftsmen are unique. It is doubtful if anything as old and as good will turn up in the future. The artist who drew these sketches lived with the men he portrayed, and many little details show that he had watched them at their work. These "portraits" carry conviction of their accuracy. We are fortunate to have them.

These sketches were first printed in Mummenhof's *Die Handworker*. This is Volume VIII in *Nachbildung der Kupfer und Holtzschnitte aus Deutches Leben* . . . (13 vols.). They also appear in Feldhaus' *Technik der Vorzeit* . . . and in his *Technik der Antike*. The only American publication in which they have previously appeared is the *Technology Review*, Cambridge, Mass. May 1941 issue. I am indebted to this publication for the loan of these half tones.

Shaker Knitting

By Charles Reichman

Although far better known for their work as furniture craftsmen and horticulturists, the members of the United Society of True Believers in Christ's Second Appearing, less pretentiously known as the Shakers, played an important role in the development of the art of knitting in this country.

Originally, knitting was an incidental activity in the Shaker "families." During the long, cold, winter evenings, the sisters of the sect would repair to their workrooms to card, comb and spin yarn, and knit stockings, mittens and underwear. These articles at first were made for home consumption, but as more Believers were attracted to the sect, the surplus output of the sisters was marketed in neighboring towns and sold to visitors. In time, the making of various knitted articles developed into a full-time business.

The Shakers considered knitting such an important occupation that, at the age of four, both boys and girls were taught to knit. Once having mastered the art, these boys and girls were required to knit whenever they were not otherwise engaged. Each girl and boy was expected to turn out daily a quantity of knit goods commensurate with his or her age (*Shaker Industries* by Sister Marcia, *Good Housekeeping*, Vol. 43, No. 1). Knitting, both hand and machine, was also taught in the private schools for girls which some of the Shaker communities had established. (Advertisement in *Shaker Manifesto*, January, 1898).

During the early stages of the sect, only knitted socks, mittens and underwear were produced, but as the market for these articles expanded in the "outside world," the manufacture of other knitted articles was developed. Reference to old Shaker account books indicates that the Shakers also knitted silk hair nets, mitts and wristlets, gloves, table mats, shawls, gaiters or "oversocks" and washcloths.

Sweaters were added to the Shakers' knitted goods line during the latter part of the nineteenth century. In the official publication of the sect, the *Shaker Manifesto* for February, 1898, there appears an advertisement over the name of Hart & Shepard, of East Canterbury, New Hampshire, offering "Shaker Knit Goods: Gents' half-hose and Sweaters suitable to all athletic sports, Bicycling, Boating and Baseball." The sweaters and hose were made of Australian wool in three grades, heavy, medium and light. The standard colors were white, black and blue, although the medium grade was also available in tan, garnet, blue, brown and gray. Both sweaters and half-hose were knitted in a coarse jersey rib stitch. The sweaters were styled in turtle-necks, and retailed for as high as $20 apiece.

Originally the Shakers produced all their knitted articles by hand, but later knitting frames were utilized; hand knitting, however, continued. In 1874, Charles Nordhoff, during a visit to the Enfield, New Hampshire, family, observed that the Shakers "keep several knitting machines busy making flannel shirts, drawers and socks." (*Communistic Societies in the United States*). A year later, a visitor to the Shaker village at East Canterbury reported that the Shakers there "have a knitting factory on a small scale where woolen sweaters and hosiery are made." (*A Glimpse into the Inner Circle* by Agatha B. E. Chandler). In the *Shaker Manifesto* for January, 1878, there appears an editorial note informing Shaker families that "we are using a number of Bickford Knitting Machines." The editorial note further states that the machines "are satisfactory indeed. Being among 'the wonders of this age' of machinery, their utility and expedition in business should be experienced by all, at so small cost."

The Bickford Knitting Machine was a small home appliance that could be attached to an ordinary house table with a screw clamp. It was manufactured by the Bickford Family Knitting Machine Co., of Brattleboro, Vermont. The cost of the machine, compiete with all parts, was $20.

Shaker knitted wear was regularly advertised in the *Shaker Manifesto*, and was featured in the catalogues which many of the "families" published. At first the Shakers sold their knitted articles through members of the sect who peddled them in neighboring towns. Later, many of the "shakertowns" established stores in surrounding communities. In larger and more distantly located towns and cities, the Shakers sold their knitted goods through selling agents.

Knitted wear manufactured by the Shakers were the epitome of simplicity in styling. They were well made, but all the knitted articles possessed the distinct "Shaker look" which, according to one observer, was synonymous with a "reticent impersonal quality of pure usefulness unobscured by superfluous detail." It should be pointed out, however, that the simple, unadorned character of Shaker knit goods was in keeping with a fundamental tenet of the sect as formulated in the *Millenial Laws* of 1821. According to these strictures, "fancy articles of any kind or articles which are superfluously finished, trimmed or ornamented, are not suitable for Believers, and may not be used or purchased."

Although the Shakers and their peculiar religious and communistic doctrines have since been forgotten, the contribution which the sect made to the art of knitting in this country finds lasting reminder in the continued popularity of the shaker sweater, a knitted article of apparel which the Shakers originated and which is one of the basic staples of the sweater industry today.

Early American Industries Association

Early American Industries Association

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Providence, R. I.

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Communications should be addressed as follows: Pertaining to the *contents* of THE CHRONICLE, to Mr. Sprague. Suggestions for prospective members to Mr. Bacon. Other matters, to Mr. Hatch. Addresses as here given.

Printed by Case the Printer,
(Henry A. Mayer),
135-29 40*th Road, Flushing, N. Y.*

Our Purpose

The purpose of the association is to encourage the study and better understanding of early American industry, in the home, in the shop, on the farm, and on the sea, and especially to discover, identify, classify, preserve and exhibit obsolete tools, implements, utensils, instruments, vehicles, appliances and mechanical devices used by American craftsmen, farmers, housewives, mariners, professional men and other workers.

Dues

The annual dues are payable January 1st, and are as follows: Regular members $1.00; Contributing members, $2.00; Supporting members, $5.00; Sustaining members, $10.00 and up. There is no distinction between the classes, except the amount of the dues, but the publication of THE CHRONICLE cannot be financed unless a considerable number of the members pay more than $1.00. Each member is expected to voluntarily place himself in the class which represents the amount he is willing to contribute to the support of the Association for the current year. THE CHRONICLE is sent to all members without additional charge. Many of the back numbers may be secured from the Treasurer for from 20c to $1.00 each, according to the supply on hand, and a twelve-page index to the twenty-four numbers of Volume I, containing a useful bibliography, for $1.00 each. For further information, address any of the officers.

Recruiting Committee

The existence of a Recruiting Committee is an assumption that it is desirable to increase the membership of the Early American Industries Association.

We are a very special group and new members should be, as we are, eagerly interested in the purposes of the Association. They should enjoy the group meetings, appreciate the educational articles in THE CHRONICLE, and themselves contribute to the sum total of special knowledge the Association is attempting to accumulate, preserve and broadcast. The dollars they would contribute are important but if the Association is to endure and increase its educational influence, it is still more vital that an impressive membership total of the same quality we are should be maintained. We *are* the Association and it is *ours* and every member should feel that this is so,—and be glad.

Now, fellow-members, please ask of yourselves a question! Just how can any committee locate such potential candidates for membership? Doubtless there are thousands in the country, but where and who are they?

Your committee has no special powers of divination, nor has it telepathic endowment. There are no lists of such people and, if there were, circularization or unlimited correspondence is impossible,—and of doubtful effect at best.

Your committee *is* ready to correspond if a definite target is discernible. It seems to us that it is to the personal advantage of every member to help us do the job. Certainly a larger group resulting in perhaps more CHRONICLES, very possibly more meetings, some in areas where none have ever been held, would help to moderately roll a snow-ball and make our Association more effective.

It seems probable that almost every member knows at least a few persons who might like to join. Even very small groups in a given community would reap reward from a meeting from time to time. Some of these would grow and some in time become Chapters. If you will co-operate by filling out the slip accompanying this CHRONICLE, your committee will communicate with your candidates, but, after all, a personal word from you would accomplish more than perhaps several letters from a stranger.

New Jersey Chapter

Sprague Chapter Number One of the Early American Industries Association assembled Saturday, November 8th, at The Old Mill Inn, Bernardsville, N. J., for the fall meeting, presided over by Mr. Wallace K. Brown. About thirty members and friends attended. Mr. C. Carroll Palmer, secretary-treasurer, gave a brief report of a preceding executive meeting. The task of Mrs. Aline K. Wolcott to promote membership extension was explained. Our Honorary Chairman, Mr. William B. Sprague, entertainingly spoke of his "collecting bug" begun and nurtured in Litchfield, Conn. The value of incorporating the National Association was brought out. He recounted many amusing anecdotes of his vast and various finds. Material for THE CHRONICLE was solicited. Echoes of the meeting held in Northampton were presented in closing. A discourse on "Wheel Making" followed. Mr. Palmer exhibited a number of related tools used in this trade from his collection in Plainfield. He told of the boring and morticing of the hub, shaping of the spokes and felloes, and finally of the complete wheel assembly bound round with the ponderous tire of iron. A "left-handed" monkey wrench was shown for novelty. His recent acquisition of a Conestoga wagon-jack dated, "1798," in perfect working order, excited much interest. The chairman called on Mrs. Niccolls of Seattle, Washington, to tell of her achievement with child education. She told of traveling exhibits made of lantern slides and tools that are circulated over a wide area to broaden and revive interest in hand tools and trades little known today. The newly-elected National president, Mr. Alexander J. Wall, spoke of promotional effort to be carried on this coming year to spread the scope of the Early American Industries Association and the hopes of recording by pictures and files the collections available. He desires by this means to record for posterity a cross-section of free American life as portrayed by the industry of its people. Numerous articles were brought in for identification and exhibited to the group, the object being to "stump the experts," and, as usual, several of them precipitated lively argument before their names or probable functions were agreed upon. Refreshments were available following the meeting.

Annual Meeting

The annual meeting was held, according to our almost invariable custom, at the Hotel Northampton, Northampton, Mass., on November 3rd, with over 150 members in attendance. Despite the keen disappointment which everyone felt at the absence of President Wiggins, enforced by illness, the occasion was a most interesting and enjoyable one. A dozen or more members arrived on the scene the previous evening, and many more drifted in during the morning. The meeting was formally called to order at 2.30 p.m., by Mr. Wallace K. Brown, who had been requested by the Advisory Committee to act as chairman, which he proceeded to do with great efficiency and dispatch. Mr. J. D. Hatch, Jr., submitted an informal report, as Secretary, on the state of the membership, and presented the following condensed account as Treasurer, both of which were, on motion, accepted.

November 1st, 1941

RECEIPTS

Balance Forward	$ 451.72
Sale of Back Numbers	43.90
Dues	775.57
Outlet Book Co. (mailing circulars to members)	35.63
	$1,306.82

EXPENSES

Printing CHRONICLE	$ 586.60
Office (Wiggins, $37.45)	61.98
Secretary (including Outlet mailings)	183.75
Postage	178.77
Printing Bacon Letter to Members	22.40
Printing Notice of Annual Meeting	28.35
	$1,061.85
BALANCE ON HAND	244.97
	$1,306.82

Mr. Hatch called particular attention to the substantial increase in revenue from the sale of back numbers of THE CHRONICLE, and stated that he is constantly besieged by requests from institutions of various kinds for numbers of which our supply is exhausted. Mr. J. Earle Bacon reported as Chairman of the Recruiting Committee. He gave the meeting a very graphic picture of the problems which he has to deal with and made a forceful appeal to all the members to help him by sending him the names of prospects. It was voted that, with the next issue of THE CHRONICLE, there should be enclosed a blank for this purpose, and most of those present, by a show of hands, pledged themselves to make every effort to send Mr. Bacon at least one name. Mrs. Niccolls, our leading representative on the Pacific Coast, gave an interesting account of her activities in that area, and appealed to the members for donations of duplicates of trifling value, with which to start an Association collection out there, as well as photographs of interesting and unusual items. The chairman then called for nominations of officers for the ensuing year. It having been definitely announced that Mr. Wiggins would be unable to serve as President, Mr. John M. Connor offered, and Mr. Charles Messer Stow seconded, the nomination of Mr. Alexander J. Wall, Director of the New York Historical Society, for that office and Mr. Wall was unanimously elected. On motion, Messrs. Connor and Stow were appointed a committee to call upon Mr. Wall and notify him. Mr. Hatch and Mr. Bacon were re-elected Secretary-Treasurer and Recruiting Chairman, respectively, practically by acclamation. Mr. Stow then announced that a few members, including himself, had taken it upon themselves to procure a gift for the retiring president, Mr. Wiggins, as a slight token of the deep appreciation of the membership for his splendid leadership, as well as of their personal affection for him. Mr. Stow explained that the first idea was to find something which would embellish Mr. Wiggins' collection, but that it had proved impossible to find anything that would fit in and not be duplication, so that, through Mr. Stephen Ensko, the well-known silver expert (who, incidentally declined any profit on the transaction), he had purchased a silver beaker, bearing the mark of William G. Forbes, an 18th-century New York silversmith, and an appropriate legend identifying it as a tribute to Mr. Wiggins from the members of the "Pick and Shovel Club." The cost of this handsome article was readily forthcoming from those present and Mr. Stow was delegated to deliver it to Mr. Wiggins at such time as seemed advisable.

An auction of members' duplicates was then held according to an extremely novel plan. As the list of sellers was called, each one handed up an article of his or her own choosing—all of which had been on display practically all day—and, when it was bid in, delivered it in person to the purchaser and collected the price, thus doing away with the intermediate handling of money or the keeping of accounts, and, in some instances, resulting in introducing to each other members who had not been previously acquainted, and it was surprising how smoothly everything worked after the first few sales. Our fellow-member, Mr. George Simmons, who does a bit of auctioneering as a side-line, conducted the first part of the sale and "did a swell job." Mr. George Bean, a Northampton auctioneer, who had agreed, as a personal favor to Mr. Wiggins, to help out, arrived later and took over. Mr. Bean showed himself a live wire, not only in the way he kept the interest up and the prices high, but in deciding to become a full-fledged member of the Association. Notable among items which caused lively bidding were an old farm bell and an exceptionally well-made "goose yoke." A few items unrelated to early American industries, such as a piece of three-mould glass, a table cover, etc., were offered but excited little interest.

The auction closed shortly before 6 p.m. and all turned their attention to the attractively laid tables on which the Harvest Supper was spread. Those who have partaken of Wiggins' fare know all about it; to those who have not, mere words could not possibly convey an idea of how delicious and different it is from what one expects at a public hostelry. Here again we missed the presence of our genial host, but Mrs. Wiggins was fortunately on hand to give us a cordial welcome.

MR. WIGGINS has requested us to publish the following:

"Dear Mr. Editor: I wish, through your columns, to express my very deep appreciation for the lovely Forbes beaker which was presented to me by the members present at the annual meeting. It was a matter of deep regret to me that I could not personally thank each one of the hundred or more friends who participated in this beautiful and touching gift. I shall treasure this token of friendship always."

Sincerely,
LEWIS N. WIGGINS.

Early American Industries Association

Membership

Membership lists should be amended as follows: (N) indicates new member; (S) indicates non-member subscriber; (Ch) indicates change of address; (D) indicates decease; (R) indicates resignation; (Co) indicates correction.

CONNECTICUT

Hartford: Kernochan, F. E., 269 S. Marshall St. (N)
New Haven: Yale University Library (S)

DELAWARE

Wilmington: Geesey, Titus, "Long Ago," R.D. 2 (N)

GEORGIA

Nacooche: New, Robert W. (N)

MASSACHUSETTS

Boston: Howard, S. B., 16 Arlington St. (N)
North Brookfield: Cole, Bertha R., 1 Gilbert St. (N)
Northampton: Bean, George H., 10 Main St. (N)
Sturbridge: Watson, George H., Box 26 (N); Watson, Mrs. George H., Box 26 (N)
Wellesley Hills: Lufkin, Eben B., 220 Ridgeway Rd., Weston (N)
Worcester: Childs, Doris M., 80 Beverly Rd. (N); Childs, John E., 80 Beverly Rd. (N); Lyseth, Mrs. Amy G., 46 Berching St. (N)

NEW HAMPSHIRE

Concord: New Hampshire State Library, 20 Park St. (S)

NEW JERSEY

Bloomfield: Bieker, Edwin, 79 Day St. (N)
Maplewood: Schneider, Edwin Drummond, 59 Linden St. (N)
Montclair: Hutchinson, Frank J., 49 Lloyd Rd. (N)

NEW YORK

Hempstead: Morson, William Taylor, 203 Cathedral Ave. (N)
New York: Haselbauer, Peter P., 340 E. 66th St. (Ch); Kane, Joseph Nathan, 838 West End Ave. (Ch); Little, Duncan MacD., 33 W. 67th St. (N)
Oxford: Hill, Marshall G. (Ch)
Prattsburg: Simmons, G. Madison, Box 1, Prattsburg, N. Y. (N)
Schenectady: MacCready, Donald W., City Hall (N)

PENNSYLVANIA

Altoona: Dickey, Earl W., 2417 2nd Ave. (N)

RHODE ISLAND

Providence: Steers, Mrs. Thomas E., 21 Barnes St. (N)

The Questionnaire

Questionnaires recently received have been tabulated as follows. For key to abbreviations, see page 7.

MASSACHUSETTS

Springfield: Mrs. Abbott R. Todd, 79 Edgemont St. (C). Collects KH. Wants LP. Write only *.

NEW YORK

Hempstead: William Taylor Morson, 203 Cathedral Ave. (C). Collects TC, especially carpenter's tools. Wants LP. Write *. Visit. (Bradford, N. H.)

Schenectady: Donald W. MacCready, Department of Health, City Hall (C). Collects KH, LD. Wants LP. Write *.

PENNSYLVANIA

Altoona: Earl W. Dickey, 2417 2nd Ave. (C). Collects FT, KH, LD, TC. Wants LP. Write. Visit.

RHODE ISLAND

Providence: Rhode Island Historical Society, 68 Waterman St. Collects and displays historical relics pertaining to the State of Rhode Island. Wants LP, by gift or exchange. Open daily, 9-5; Tues. also 7-9; Sun. 3-5.

Tobacco Twister?

From MR. RUDOLF P. HOMMEL:

"In regard to your 'Mysterious Machine,' pictured in THE CHRONICLE (Vol. 2, p. 16) I wish to hazard a guess. I procured lately in Lancaster County, Pa., which, by the way is quite a tobacco region, a machine very similar to yours, which I assume you got in Connecticut, perhaps also in a tobacco region? Anyway, my guess is that the machine was used for twisting tobacco into the so-called 'twists' which preceded the plug tobacco for chewing. I faintly recollect to have seen twist tobacco in my youth and they were about four inches long and in shape similar to the twisted flax, bulky at one end and coming to a point at the other end. The perspective sketch (Fig. 1) of my machine is faulty, but it shows guides for the belts, on the left the belt had to be straight to pass over the guide with an outer notch, on the right the guide has the notch on the inner side and here the belt was applied crossed in the form of a figure 8. The result then was that the iron hook turned in one direction and the iron clamp in the other when the crank was turned. The other sketch (Fig. 2) showing the elevation of the machine is drawn to scale. The lower axle is a bronze rod with an ornamental bulge which apparently had nothing to do with the functioning of the machine. On the edge of the base board of the machine is a slanting cut which must have held a strip of wood fastened with a screw. The strip is missing and I do not know if it extended slantingly upward or downward from the base board. I omitted the belt guides on this sketch. I would like to get your view on my theory. The distance between hooks on your sketch seems to be about 5 3-4 inches which may account for a different type of twist tobacco in the Connecticut region."

(Mr. Hommel's theory seems plausible. The previous sketch which he refers to was not drawn to scale and a check-up shows the hooks to be just about four inches apart, so it would appear almost certain that the two machines, one from Pennsylvania and the other from Connecticut, were for the same purpose, whatever it was. It was our impression that Connecticut tobacco is used almost entirely for cigar wrappers, but very probably that was not the fact in the early days.—Ed.)

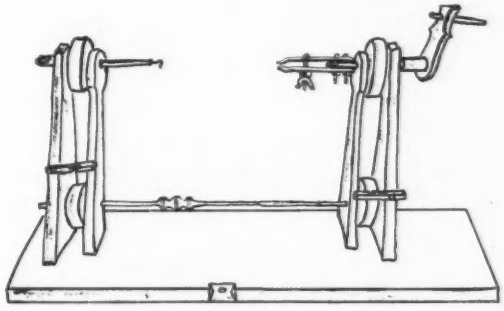

FIG. 1

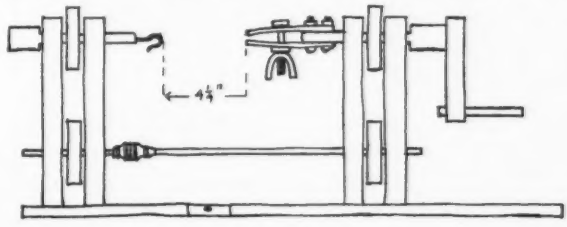

FIG. 2

COMMUNICATIONS

From Mr. Joseph E. Sandford:

"Referring to Mr. L. L. Thwing's letter in your May issue relative to my article *Diderot in England* (The Chronicle, September, 1938) I intended to make it clear the publication mentioned dated 1755, was John Hinton's Supplement to *A New and Universal Dictionary of the Arts and Sciences* and not *The Universal Magazine*." The purpose of my article was to trace to their source copper engravings of the crafts which had been noticed in The Chronicle, March, 1937. Mention of *The Universal Magazine* and the Abbe Pluche's *Spectacle de la Nature* was made only as it bore upon that problem. The reprinting of the machine and mechanic arts index from *The Universal Magazine* is welcome as is the bibliographical material on the *Spectacle de la Nature*. While Volumes VI and VII contain much information on the hand crafts, Volumes III and V should be of interest to the industrial antiquarian. Volume III has a plate showing the Fayance potter at his wheel and Volume V has several plates on wind and water-mills, as well as text.

This work of Pluche's must have been one of the most popular in eighteenth Century Europe. It went through many editions. This is well illustrated by my set composed of odd volumes. My volume II is a London Eighth Edition printed in 1757 *for* R. Francklin and thirteen other booksellers. This may be similar to the Library of Congress set mentioned by Mr. Thwing. It was translated by Mr. Samuel Humphreys and dedicated to a Dr. Pellet—a good name for a man of medicine—President of the College of Physicians. My volume III, in French, was printed in that city of book pirates, Amsterdam, in 1743. Volume V is a new edition, Paris, 1755, Estienne & Fils and Volume VI, the same, Paris, 1747. To cap the climax are two volumes bound in one, labeled XI-XII of a Venetian edition —*Lo Spettacolo della Natura* Press of Giambatista Pasquali, 1751. These are the volumes on the handcrafts—VI and VII of the French sets. All of these Continental editions are gay with gold-stamped flowers on their backbones and colorfully marbled end papers, a contrast to the unadorned commonplaceness of the English volume's binding."

From Mr. A. G. Packard:

"There have been several references lately in The Chronicle to daguerreotypes, so I am enclosing information taken from one of our Massachusetts publications bearing on this subject. In making up these figures the report says there were no daguerreotype artists in 1845, but during the following ten years it would appear much interest was shown and, in 1855, 134 artists had started in the business, employing 260 'hands' and turning out the value of over $600,000 worth of work, with a capital investment of nearly $140,000, and having made over 400,000 pictures This was in Massachusetts alone, and there is no telling how much work was turned out in other states, but no doubt a great deal, showing that daguerreotypes attained popularity very rapidly. I have had some forty to fifty, perhaps more, of these daguerreotypes in my possession over the last few years, and have pried up the pictures in a good many of the cases to ascertain who made them, when, and whom they are pictures of, but have seldom found anything. It would seem this was a fatal mistake, for, probably a few years after the picture was made, the name of the subject had been forgotten. Most of the cases are of embossed leather, but a few are of what I have been told was gutta percha, and finely moulded some of that sort are, indeed; others are encased in some hard substance and have inserts of mother of pearl."

(The figures which Mr. Packard enclosed are a "break-down," by counties, of those quoted in his letter. The range from Suffolk, the largest, to Barnstable, the smallest, is approximately as follows: Artists, 35 to 1; number taken, 230,000 to 300; investment, $83,000 to $100; hands, 110 to 1; total value of product, $344,000 to $450.—Ed.)

In a later communication, Mr. Packard states that he has come across another lot of daguerreotype cases, and having pried the pictures out, found legends on two of them as follows: "Genuine Union Case, Fine Gilt and Burnished Hinge, S. Peck & Co., Manufacturers" and "From Studley & Gordon's Miniature Case Manufactory, No. 5 Hanover St., Boston."

From Mr. J. Earle Bacon:

"Who was the first man whose curiosity led him to wonder if a physiognomy devoid of whiskers would not feel more comfortable? Maybe the Neanderthal or Pithecanthropus men used sharp-edged flints or shark's teeth, from both of which saws were made. Some of the early Colonials imported Westenholm or Wade & Butcher razors from Sheffield, England, but many could neither afford nor obtain such luxuries. These latter used 'shaving-stones.' Their faces were toughened and hardened by exposure to wintry blasts and summer sun and they could 'take it.' A shaving-stone is a piece of volcanic pumice —the suds or froth on the surface of super-heated lava. The lava in effect explodes when it reaches the air and, when cooled, its surface is a very porous stone, so honeycombed with air bubbles that like Ivory Soap — 'It floats.' If a piece of this is sawed in twain the surfaces look very like a so-called rubber bath sponge except that the edges of the holes are sharp. During the writer's younger days, after a full summer of boat-sailing, his face was the color of a coffee bean and as tough as walrus hide. His insatiable curiosity got the better of his judgment and he experimented with a shaving-stone. It was a long process and, while he does not recommend discarding a modern safety razor, it *did* do the trick. It 'razzed 'em off' and his face ultimately recovered."

From Mr. Newton C. Brainard:

The article by Miss Gaines in the May Chronicle suggests to me the possibilities of an interesting article on the construction of the wheel of a spinning-wheel if anyone can be found who knows about it. It is not a wheelwright's job. The felloe is sawed out from plank and not bent. It is then turned and the spokes do not enter the felloe but butt against the bevelled interior rim and are fastened by pins driven at an angle. All I have seen have been made this way. Miss Gaines speaks of a name on her wheel. I have seen one or two with names which seem to me to be that of the maker rather than the owner. They are still being made, as not many years ago I saw a sizeable consignment of them in a freight house in northern Quebec."